# ANNUAL REPORT

# of the

# CANCER TREATMENT and RESEARCH FOUNDATION

# of

# NOVA SCOTIA

## APRIL 1, 1983 to MARCH 31, 1984

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# Chairman's Remarks

December 1st, 1984

Hon. G. Sheehy, D.V.M.
Minister of Health
Province of Nova Scotia.

Dear Dr. Sheehy:

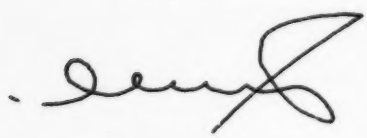
I am pleased to submit the Second Annual Report of the Cancer Treatment & Research Foundation of Nova Scotia for the year ending March 31st, 1984.

The past year has been an exciting one marked, in particular, by the formal opening of the Halifax Clinic on October 19th, 1983, and the subsequent establishment of the various services of the Foundation within that complex.

Despite the difficulties associated with the physical transformation of the various services to the new facility, the staff of the Foundation responded admirably and, I believe, provided a high quality of health care service to the patients. It is to be expected that there will be some "growing pains" as we strive to meet our mandate, but I remain convinced that the Foundation is the proper vehicle for a meaningful thrust in cancer treatment and research. I believe that the Foundation has been well accepted by the medical communities as well as by the people that we serve.

As we continue our growth and development, we are mindful of the need for additional manpower, particularly in the Department of Radiation and Oncology, which is obviously a vital need preliminary to an effective outreach program.

Although we rightly acknowledge the excellent facilities and equipment in our Clinic, we are also justifiably proud of our dedicated personnel and the "human element" they display in the treatment process. I must also acknowledge the outstanding contributions of Dr. D.H. Thomson and Harry Churchill, who continue to serve the Foundation with leadership and dedication.



C.H. Durland
Chairman

# FOUNDATION

Mr. Clare Durland, Q.C. — *Chairman*
Mrs. Florence Stevens
Mr. Gerald Martin
Mrs. Marlene Grantham
Mrs. Mary Ray
Mrs. Jans Henderson
Dr. Peter Jackson
Mr. William Gilbert
Dr. Emerson Moffitt
Dr. W. Carl Tupper
Mr. Peter MacKeigan
Miss Shulamith Medjuck
Dr. William Butt

# COMMITTEES

**EXECUTIVE COMMITTEE**
Mr. C.H. Durland — *Chairman*
Mrs. F. Stevens
Dr. D.H. Thomson
Mr. H.J. Churchill

**FINANCE AND PERSONNEL COMMITTEE**
Mrs. F. Stevens — *Chairperson*
Mr. P. MacKeigan
Dr. W. Butt
Mr. C.H. Durland

**ANNUAL REPORT COMMITTEE**
Mrs. J. Henderson — *Chairperson*
Mrs. T. Croucher
Mr. H.J. Churchill

**RESEARCH COMMITTEE**
Dr. E. Moffitt — *Chairman*
Dr. J. Aldrich
Dr. W.C. Tupper
Dr. W. Butt
Dr. R. Chambers
Dr. J. Aquino
Dr. D. Thomson
Dr. A. Pyesmany

**PATIENT SERVICES COMMITTEE**
Mr. C. Durland
Mr. W. Gilbert
Dr. P. Jackson
Dr. D.H. Thomson
Mr. H. Churchill

**MEDICAL ADVISORY COMMITTEE**
Dr. D.H. Thomson
Dr. Michael Cook
Dr. S. Awad
Dr. G.A. Lawrence
Dr. R.H. Burnett
Dr. S.M.A. Naqvi
Dr. R.J. Bedard
Dr. B. Badley
Dr. S.C. Robinson
Dr. D.A. Gillis
Dr. V.W. Ing
Dr. B. Perey
Dr. J.D. Black
Dr. A. Pyesmany
Dr. G.P. Konok
Dr. J.M. O'Brien
Dr. M.R. Rajani
Dr. J.W.I. Morse
Dr. T.B. Murphy
Dr. B. Steele

**EXECUTIVE DIRECTOR'S ADVISORY COMMITTEE**

Dr. D.H. Thomson
Dr. O. Wong
Dr. D. White
Dr. J. Aldrich
Dr. R.C. Fraser
Dr. P. Belitsky
Dr. F. Wong
Dr. G.W. Bethune
Dr. J.B. Ross
Dr. L.A. Fernandez

# HALIFAX CANCER CLINIC
# MEDICAL STAFF

**RADIATION ONCOLOGY**
Dr. D.H. Thomson
Dr. R.M. Cunningham
Dr. J.F. Filbee
Dr. O.S. Wong
Dr. L.A. Garcia-Nicoletti

**DERMATOLOGY**
Dr. J. Klotz
Dr. A.H. Murray
Dr. J.B. Ross

**GYNAECOLOGY**
Dr. R.C. Fraser
Dr. S.C. Robinson
Dr. M.G. Tompkins
Dr. C. Tupper

**MEDICINE**
Dr. B.W.D. Badley
Dr. S.F. Bedwell
Dr. L. Fernandez
Dr. J.D. Gray
Dr. O.A. Hayne
Dr. V.W. Ing
Dr. R.L. Kirby
Dr. P.L. Landrigan
Dr. G.R. Langley
Dr. D.J. MacIntosh
Dr. J.M. MacSween
Dr. T.J. Marrie
Dr. J.J.P. Patil
Dr. J.L. Sapp
Dr. W.F. Schlech
Dr. A.H. Shears
Dr. B.L. Sheridan
Dr. C.N. Williams

**MEDICAL ONCOLOGY**
Dr. D.F. White

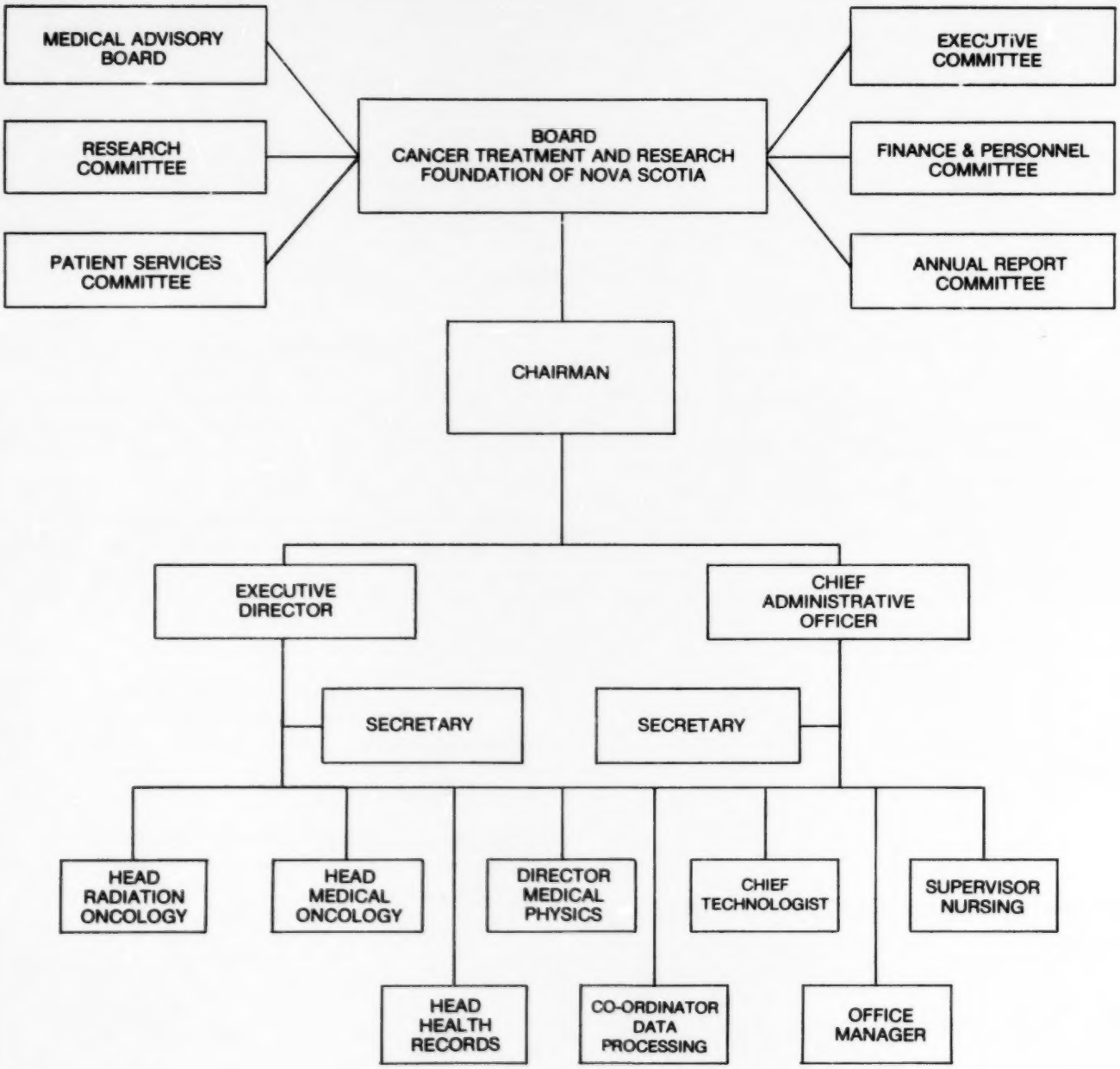
**SURGERY**
Dr. D.C.G. Bethune
Dr. G.W. Bethune
Dr. A. Bodurtha
Dr. C. Bugden
Dr. M.T. Casey
Dr. J.H. Charman
Dr. J.P. Curry
Dr. C.H. Graham
Dr. W. Henderson
Dr. G.P. Konok
Dr. A.S. MacDonald
Dr. A.C. MacDonald
Dr. D.E. Morris
Dr. D.W. Nicholson
Dr. S.T. Norvell
Dr. B.J. Steele
Dr. J.K. Purves

**UROLOGY**
Dr. R.B. Auld
Dr. S.A. Awad
Dr. P. Belitsky
Dr. W.A. Ernst
Dr. F.G. Mack
Dr. R.D. Schwarz
Dr. S. Yoon

**NEUROSURGERY**
Dr. R.O. Holness
Dr. W.J. Howes

**OTOLARYNGOLOGY**
Dr. G.M. Novotny
Dr. F.S.H. Wong

# ORGANIZATION CHART



# ORGANIZATION

**ADMINISTRATION**

Dr. D.H. Thomson
*- Executive Director*
Mr. H.J. Churchill
*- Chief Administrative Officer*
Miss A. Titus
Mrs. N. Sims
*- Secretaries*
Mr. G. Hatcher
*- Office Manager*
Mrs. J. Smith
*- Co-ordinator Information Systems*

Mrs. C. Allen
Mrs. J. Hampden
Miss M. Haase
Miss T. Lipskey
Miss T. Grandy
Mrs K. White
Mrs. B. Spellman
*- Support Staff*
Mrs. M. Penny
*- Cancer Society Patient Services Program*

The Foundation's Board, committees and staff have been very busy during 1983-84. On April 8, 1983 Premier John Buchanan opened the Dickson Building which houses our Halifax Clinic. The Foundation had the formal opening of the Halifax Clinic on October 19, 1983, and after the opening remarks conducted an "Open House". The staff worked very hard to prepare and display materials and to explain to those who attended their role and the functions of our many pieces of equipment. This was followed in the evening by public lectures by Drs. Thomson, White, Bethune and Aldrich. We were very pleased with the response to the "Open House".

The move of the former "Tumor Clinic" to the new facilities in the Halifax Clinic took place in May. The installation of the Therac 25, a linear accelerator made by Atomic Energy of Canada started at the same time. This equipment, along with a Therac 6 and most of the furniture in the Clinic were purchased by the Department of Government Services of the Province. They were also responsible for the construction of the building which contains our Clinic. The cooperation and assistance received, in particular from Mr. M. Zareski and Mr. B. Stonehouse, from this Department was invaluable in our establishing and moving into our new Clinic.

The Provincial Out-Patient Chemotherapy Program, which the Foundation administers in consultation with the Department of Health, has received applications from thirty-seven (37) hospitals. Dr. D.F. White, our Medical Oncologist, is co-ordinating the program and is working very closely with hospitals and doctors throughout the Province.

The Foundation received approval of the Department of Health to purchase a "Patient Information System" from CyCare Systems Canada Limited. This company is also involved with computer systems for cancer agencies in Ontario and British Columbia. Some of the programs included in the system are Patient Enrollment and Case Registration, Provincial Cancer Registry, Incidence Statistics, Scheduling, and Medical Services Reporting. It is planned to have enrollment operating early in the coming year. The Foundation has employed Mrs. Jacklyn Smith to coordinate the implementation of the system.

On June 7, the Foundation signed the first agreement with the Nova Scotia Government Employees Union covering our unionized employees for a two year period ending March 31, 1984. All employees, except management, medical and physicists staff, are included in the one agreement. The first graduation of our School for Radiation Oncology Technologists took place on June 23, 1983.

Medical Staff By-Laws were approved by the Board in September. Under these By-Laws divisions were established for each speciality in our Clinic and there will be a Co-ordinator for each Division. An Executive Director's Advisory Committee was also set up. At the same meeting 6 co-ordinators and 52 consultants were appointed.

Committees of the Foundation were active during the year. The Finance and Personnel Committee reviewed the financial statements, reviewed and recommended our budget submission and the approved budget, and recommended clauses for the final negotiated agreement. Mrs. Stevens has been very active as Chairperson of this committee. The Research Committee spent a considerable amount of time developing a research policy for the Foundation. A new committee, "Patient Services", met on several occasions and discussed the development of consultative and follow-up clinics in Yarmouth and Sydney.

Our Medical Advisory Board, comprised of doctors from all parts of the Province, met on three occasions during the year. They reviewed the proposed medical staff by-laws, discussed peripheral clinics and cancer committees in hospitals, commented on referrals to the Halifax Clinic, and other matters related to the medical aspects of the Foundation.

The Foundation has acquired an after loading system known as a Selectron. This is a computer operated device used in the treatment of gynecological patients in the Victoria General Hospital. The major advantage of this machine is to provide radiation safety for nurses, technologists, medical staff, visitors or others who come into contact with patients while under treatment. It allows for a safe environment while attending to the patient by removing the radiation sources to a protected storage unit.

The major achievement during the past year, in many peoples' opinion, was the treatment of the first patient on Atomic Energy of Canada's Therac 25, linear accelerator. The accelerator was planned, and built in Canada and our staff are proud to tell people we were the first to use it to treat a patient.

From the above information, you can see the Foundation had a active year. During the coming year, the implementation of the Information System, use of the Selectyon and the continued growth of clinics in Halifax, Yarmouth and Sydney, will take place. We also look forward to developing funds for research programs, providing leadership in cancer care and treatment and ensuring that our patients' needs are met.

# Report of the Executive Director

The year ending March 1984 has been one of consolidation following the completion of the construction of the Halifax Clinic and its occupation. The transition of the widely separated sections of the foundation to the Halifax Clinic was accomplished without interruption of service to patients. The final phase of the move will take place in July 1984 with the transfer of the Ear, Nose and Throat Tumour Clinic over to the Halifax Clinic where it will continue to function as a multidisciplinary clinic.

An Executive Director's Advisory Committee has been established to complement the Medical Advisory Committee of the Foundation. Divisions of specialties functioning within the Foundation have been established and heads of the divisions appointed. The committee is composed of the heads of these divisions, together with the Heads of Medical Physics, Medical Oncology and Radiation Oncology. This committee will advise the Executive Director in regard to the patients services provided in the Halifax Clinic within the guidelines of the Medical Advisory Committee of the Foundation.

Due to fiscal restraint, funds have not been made available to establish what I would consider a desirable research component of the Foundation. Despite lack of funds, however, clinical research has been pursued aggressively by participation in the National Cancer Institute Clinical Trials Programs and those of the Children's Study Group. Additional funding has also been obtained through the Medical Oncology Department from various drug companies enabling the Foundation to fulfill its mandate of research.

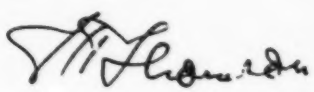
In October of 1983, we were able to treat our first patient on the Therac 25 Linear Accelerator. This treatment unit, together with the 6 MeV Linear Accelerator and the installation of the Selectron, has allowed the Foundation to provide the most modern equipment available for the treatment of cancer.

The acquisition of the CyCare Patient Information System will enable us to access records more rapidly and study the morbidity and mortality of cancer in Nova Scotia. It is expected that an Epidemiologist will join our staff within the next year.

Discussions and negotiations have been carried out with the physicians and surgeons and hospital administration in both Sydney and Yarmouth, with the prospect of establishing consultative and follow-up clinics in both these areas. It is expected that Foundation staff will be attending clinics in both of these areas within the next twelve months.

All departments within the Foundation are functioning well with staff just adequate to meet demands. Of specific concern is the shortage of Radiation Oncologists, but steps are being taken to relieve this situation in addition to adding personnel to the Medical Oncology Department. It is expected that with the increased numbers of Medical Oncologists that the Radiation Oncologists will be able to devote their full time attention to the practice of Radiation Oncology and transfer all Medical Oncology patients over to that department.

The success of any organization is totally dependent on the quality of its staff. I would like to compliment the employees of the Foundation for their willingness to adapt to change, their interest, and, above all, their caring and kindness for patients. Indeed, it bodes well for the future of the Cancer Treatment and Research Foundation of Nova Scotia.



Dr. D.H. Thomson, M.B., F.R.C.P.(C)
Executive Director

# Foundation Patients Seen At Halifax Clinic
# April 1, 1982 - March 31, 1984

| YEAR | NEW PATIENTS | | | NUMBER OF PATIENTS VISITS (New and Return) | |
|---|---|---|---|---|---|
| | Malignant | Benign | Total | Clinic | Follow-up by Mail |
| Apr. 1, 1982 March. 31, 1983 | 1678 | 312 | 1990 | 14,600 | (Approx.) 10,100 |
| Apr. 1, 1983 Mar. 31, 1984 | 1771 | 299 | 2070 | 15,145 | (Approx.) 10,100 |

## PROVINCIAL CANCER REGISTRY

| Year | No. Of New Patients Registered | No. Of Pts. Unregistered | No. Of Second Primaries | Total |
|---|---|---|---|---|
| Apr. 1, 1982-Mar. 31, 1983 | 2344 | 112* | 250 | 2706 |
| Apr. 1, 1983-Mar. 31, 1984 | 1925 | 930 + | 198 | 3053 |

* as of March 31, 1983
+ as of March 31, 1984

# PATIENTS TREATED BY RADIATION

| TYPE OF TREATMENT | NO. OF PATIENTS | | NO. OF TREATMENT VISITS | |
|---|---|---|---|---|
| | Apr. 1/82-Mar. 31/83 | Apr. 1/83-Mar. 31/84 | Apr.1/82-Mar. 31/84 | Apr. 1/83-Mar. 31/84 |
| X-Ray | 152 | 142 | 657 | 739 |
| Linear Acc (operational Mar 24. 1983) | 11 | 392 | 30 | 5990 |
| Cobalt | 1452 | 1027 | 16,708 | 11,951 |
| Gold Seed | 56 | 60 | 56 | 60 |
| Cesium | 109 | 108 | 123 | 117 |
| Beta Ray | 66 | 43 | 94 | 60 |
| Other (P32, I131) | 112 | 132 | 112 | 132 |
| **Total** | 1958 | 1904 | 17,780 | 19,049 |

# PATIENTS TREATED BY CHEMOTHERAPY

| | February 1984 | March 1984 |
|---|---|---|
| No. of cases treated with Chemotherapy | 52 | 57 |
| No. of visits for Chemotherapy | 110 | 140 |

# DEPARTMENT OF RADIATION ONCOLOGY

**Professor and Head, Department of Radiation Oncology**
D.H. Thomson, M.B., Ch.B., D.M.R.T., F.R.C.P.(C), F.A.C.R.

**Associate Professor, Radiation Oncologist**
R.M. Cunningham, M.D., D.M.R.T., F.R.C.P.(C)

**Associate Professor, Radiation Oncologist**
J.F. Filbee, M.B., B.S., D.M.R.T., F.R.C.P.(C)

**Associate Professor, Radiation Oncologist**
O.S. Wong, M.D., F.R.C.P.(C)

**Lecturer, Radiation Oncologist**
L.A. Garcia-Nicoletti, M.D., D.M.R.T. (Ed.)

## Activities

During the year April 1, 1983 to March 31, 1984, the Department of Radiation Oncology has continued to function with no increase in staff. Negotiations are continuing at the present time to add to the department strength and it is expected to attract some well trained Radiation Oncologists.

The Therac 25 Linear Accelerator has been installed and is in daily operation. This modality gives a further dimension to our department and already the patients are deriving the benefits of diminished side effects from treatment and expectation of higher cure rates.

Although there has not been a significant increase in the number of patients treated by radiation therapy, there has been a definite trend towards the referral of patients for curative treatment rather than later in their disease. As a result, the number of treatment visits has increased, and more complex and efficient methods of treatment are employed. This emphasizes the need for additions to our staff.

Medical research participation has continued and increased during the past twelve months; the major involvement being in the NCIC Clinical Trials, local studies and in the Children's Study Group. As in the past, treatment planning rounds are continuing to be held weekly with all patients having radical treatment discussed with representatives of the Departments of Medical Physics and Radiation Technology in attendance. Weekly ward rounds are also held in conjunction with the Department of Medical Oncology and all patients under the care of the full time oncologists of the Cancer Foundation in the Victoria General Hospital are discussed.

Whenever possible, staff of the Radiation Oncology Department participate in the multidisciplinary subspecialty clinics provided through the auspices of the Foundation.

# DEPARTMENT OF MEDICAL ONCOLOGY

**Head of Department of Medical Oncology**
D.F. White, M.D., F.R.C.P.(C)

Medical Oncology has developed as a separate area of clinical expertise in the Halifax Clinic over the last year. A consultative service is available in the Halifax Clinic for patients throughout the province. In addition, an inpatient consultative service exists at the Victoria General Hospital and the Halifax Infirmary.

A cancer chemotherapy unit has been developed within the Halifax Clinic with a major commitment of specially trained nursing personnel and specialized facilities for the preparation and administration of intravenous cancer chemotherapeutic agents. This unit serves as a resource for cancer chemotherapy both for the medical oncologists as well as the consultant staff within the Halifax Clinic. Standardized documentation of therapy has evolved which will allow assessment of treatment programs and also potentiate clinical studies.

A number of cooperative programs have developed in concert between Medical Oncology and other Departments both in the Halifax Clinic and in the Halifax hospitals. For example, a system of neo-adjuvant chemotherapy as part of the inter-disciplinary management of carcinoma of the head and neck has been developed in cooperation with the Department of Otolaryngology. Similar cooperative ventures in urological malignancy are on going. The department is developing standard treatment programs within the Halifax Clinic which will be documented in a booklet.

The department is actively supporting clinical research including that sponsored by the NCIC as well as initiating participation in trials of an international nature in cooperation with centres in Canada and in the United States.

The Outpatient Intravenous Chemotherapy Program initiated by the Department of Health has been administered by Doctor White and has added support to the general philosophy of making available expertise to local clinicians in the management of both inpatients and outpatients receiving chemotherapy. This philosophy potentiates involvement of community clinicians in on-going cancer care with immediate advantages to patients as far as travel is concered, and with the added aspect of quality control assurances.

With the increase in Medical Oncology personnel in the Department, subspecialization can occur so that focused expertise in the management of patients will be available.

# NURSING DEPARTMENT

**Supervisor**
V. Teasdale

**R.N.'s**
Jasmine Buisseret
Anna Cake
Trudy Gordon
Anne Hammer
Nancy Rice
Barbara Grant
Luella Woods
J. Marie Kerr

**CNA's**
Helena Burrell
Bonny Osgood

For the Nursing Department, 1983 has been a year of transition, change and adaptation due to the physical relocation of the Nova Scotia Tumour Clinic to the newly renovated facilities of the Cancer Treatment and Research Foundation. During this period of relocation, the nursing staff remained a cohesive group, showing their understanding and concern for all our patients by maintaining that "quality patient care" is our chief goal.

In June 1983, all our oncology nurses successfully completed a training program on the administration of cancer chemotherapeutic drugs. Since this was a new function for the nurses in the clinic, it has been a daily challenge and one which all have enjoyed performing.

Since the new chemotherapy treatment room was dedicated, this day care facility has been used as an area to administer chemotherapy drugs after they are prescribed by a Medical Oncologist. The day care room is used also if a patient is very weak or tired, or for a lengthy diagnostic or therapeutic procedure, i.e. blood transfusion, etc.

Oncology nurses give the drugs by I.V. push or I.V. infusion, depending on the drug used. The treatment is given on an outpatient basis and the patient can expect each visit to last approximately one to four hours, depending on the tests required before the treatment.

Nurses are in attendance at all times to ensure the safe delivery of the drugs and also to attend to the needs of the patient. During treatment the nurse has an excellent opportunity to spend time talking and listening to the patient's concerns and offers both understanding and support. The tone of the chemotherapy area is based on humaneness -- the patient comes first!

The oncology nurses will answer questions regarding the patient's concerns about the mode of I.V., side effects caused by drug toxicities and may act as a resource person for the patient, family, and family physician. Should a financial, emotional or social problem occur, the staff is able to provide assistance by contacting various professional staff who will help the patient and family cope with such problems.

In the clinic, continuing nursing education has been self-directed and the personal responsibility of each nurse. But, in order to maintain accreditation for the administering of chemotherapy drugs, each nurse has been responsible to coordinate and conduct a nursing seminar. The following are some of the topics which have been discussed:

- hyperthermia
- Port-a-Cath, a totally implantable device system
- drugs, i.e. Nabilone, Tamoxifen, etc.

In addition to the chemotherapy area, supportive nursing care is provided for patients during their stay in the Technical Department. Since most of our patients come from local hospitals, in various stages of illness, to receive radiotherapy treatments, the nurses are responsible to maintain I.V. fluid infusions, oxygen therapy, chest drainage, etc. and also

provide the patient with the necessary patient education and information as the need arises. A nurse is also present to assist the Radiation Oncologists with routine weekly visits during a course of treatment.

In the general clinic area, a number of consultants work closely with the staff, conducting various specific clinics related to lung cancer, bladder cancer, etc. Many procedures are done for patients as the need arises during a clinic visit. These procedures range from biopsies, bladder instillations, thoracentesis, bone marrow procedures, etc. Bi-weekly, a special joint multidisciplinary conference is held by the Department of Gynecology along with the Radiation Oncologist, nursing and/or dietitian.

The establishment of the Dianna Bleakney Guild in the summer of 1983 brought volunteers together working parallel with the Canadian Cancer Society in the areas of hospitality and services to patients.

Research in the Nursing Department has been limited, but we have had the opportunity to work together with the Health Record Department on a National research project for "Cancer of the Endometrium". Our contribution was limited due to the additional nursing requirements in the clinic.

# TECHNICAL DEPARTMENT

**Chief Technologist:** Lynda Burgess

**Supervisors:** Marlene Smith
Carleen Wagner

**Technologists:** Bonnie Eldershaw
Paula Robb
Kim Lloyd
Nancy Alexander
Debra Sawatsky
Gwen Baker
Christie Stevenson

The Technical Department of the Foundation has experienced another busy and challenging year in our new facilities. Technologists anxiously awaited the installation of the new treatment equipment. The 6 MeV Linear Accelerator was initiated into its full operational capacity in April-June 1983. This occasion was enjoyed by technologists and patients as minimal delays were encountered.

In June 1983, technologists Paula Robb and Kim Lloyd were given the opportunity to attend the National C.A.M.R.T. Convention in Toronto. This event coincided with the Therapy School Reunion at the Princess Margaret Hospital with which the Foundation school is affiliated.

October 1983 was an eventful month for the Technical Department. Modern technological progress saw the 25 MeV Linear Accelerator begin operation. This is a teletherapy unit which incorporates an electron accelerator. The treatment energy ranges are 5 MeV - 25 MeV electron and 25 MV x-ray.

Also in October 1983, the Technical Department participated in the official opening of the Foundation. The public were able to view the radiation equipment. The technologists answered numerous questions with regard to the treatment of cancer patients.

Various lectures were provided in technology upgrading and cancer advancement in medicine. Regular staff meetings have been held with the technologists.

Weekly Radiation Oncology Rounds are held on 9-Victoria with the Radiation Oncologists, Medical Oncologist, Technologist and Nurses and Dietitian in attendance. Departmental patient review sessions are held weekly with the Radiation Oncologists, Technologists and Medical Physics sections.

The Technical Department has instituted a twenty-four hour emergency standby system. This will provide immediate radiation patient care and service to the Izaak Walton Killam Hospital blood radiation program.

Within the past year the Department has employed two new technologists. Gwen Baker, the first graduate under the auspices of the Foundation, and Christie Stevenson, a graduate of Saint John Regional Hospital.

As the ultimate goal - care for the cancer patient - the Technical Department thanks the volunteers. Their time, kind words, listening ear, and snacks have been a blessing.

# SCHOOL OF RADIATION THERAPY

**Instructor:** Janet Garrison

**Senior Students:** Alice Verge
Maureen Urquhart

**Junior Students:** Wendy Fiander
Jean MacDonaid
Wendy MacNaughton

The School of Radiation Therapy is affiliated with the Princess Margaret Hospital, Toronto for student didactic sessions. The student enrollment is five students per twenty-four training months.

The practical experience is received at the Foundation as well as supplementary didactic sessions. The students observe the procedures used in the other disciplines associated with the cancer patient - Radiology, Nuclear Medicine and Cytotechnology.

The school participates in Allied Health orientations and students observations of therapy treatments for Allied Health. The students are given the opportunity to attend N.S.S.M.R.T. Educational Seminars, Foundation technology upgrading and cancer advancement sessions. The students submit papers in the N.S.S.M.R.T essay competition. Congratulations to Gwen Baker on her paper being selected.

Janet Garrison, the Instructor, is involved in various student activity committees. She was the therapy representative on the Ad Hoc Committee Public Relations to produce a presentation of our profession as a career.

The first graduate under the auspices of the Cancer Treatment and Research Foundation was Gwen Baker.

# MEDICAL PHYSICS DEPARTMENT

**Director**
John Aldrich

**Senior Physicist**
John Andrew

**Physicists**
Fan-Shih Chen
Cupido Daniels
Narayan Kulkarni
Stuart Jackson

**Ass't Radiation Safety Officer**
Pauline Jones

**Electronics Technologist**
George Matthews,

**Treatment Planning Technologists**
Joleen Orr
Linda Purcell

**Machinist**
Ian Porter

**Radium Curator**
Peggy Wilson

**Mould Room Assistant**
Pauline Benoit

**Secretary**
Sandra Fox

A major task for the Department, apart from its ongoing work in many areas of the Clinic, was the installation and commissioning of the AECL Therac 25, 25 MeV linear accelerator. This machine was one of two clinical prototypes installed worldwide. Because of the complexity of this accelerator and a few initial teething problems, the process took a little over four months, the first patient being treated on October 17, 1983. Since that time, numerous physicial measurements have been made to allow a wider range of treatments and to characterize the properties of the 25MV x-ray beam plus 8 electron beams. As with other new accelerators, daily quality assurance measurements have been made on all beams since installation and this will gradually be modified as the stability of the machine is assessed.

Some of the older equipment in the Clinic has been updated to provide better accuracy. The patient couches on both the Theratron 80 and the TherX simulator have been replaced with modern couches similar to those on the accelerators. The simulator has also been improved with the replacement of the image intensifier system and provision of microprocessor readout of simulation parameters.

We were pleased to welcome, in June, a new medical physicist, Dr. Stuart Jackson, from England, whose prime responsibility will be the use of radioisotopes in diagnosis and therapy. Mr. Paul Risk, who had been with us temporarily for one year, left to start a degree in Medicine. Mr. Fred Chicoine, from the Nova Scotia Land Survey Institute, spent the summer with the group mostly involved with the algorithms for compensator machinery. Mr. Christoph Schraber commenced a M.Sc. project with us concerning the interfacing of a microprocessor to a milling machine for radiotherapy beam compensator production.

The Department has been involved in many developmental research projects directed towards the improvement of patient care. These included the continuing effort towards the automatic manufacture of radiation beam compensators as mentioned previously, a study of film-screen systems used for radiotherapy verification, and a retro-fit laser backpointer for the treatment machines. There has been increased use of CT scan data in treatment planning and the computer methods used for this continue to be evaluated. Facilities have been constructed for the installation of the Selectron gynecological afterloading system and the new applicators designed for use with this new system. A major task which has been started is the use of the new Therac 25 accelerator for whole body irradiation in the treatment of mycosis fungoides. As in previous years, physics consultation has been provided to the metropolitan hospitals and has included development of quality assurance programs, calculations of radiation sheilding, further development of computational models in Nuclear Medicine, and teaching of technologists.

Many members of the Department are seriously concerned about the difficulty of obtaining funds for research development. Because all our efforts are directed towards direct improvement in patient care, funds from national agencies are not available. If the Foundation wishes to be in the first league of cancer centers, this serious problem must be addressed.

The Medical Physics lecture series has continued and has been attended by many members of the Foundation. We were again pleased to welcome guest speakers from the clinics in Edmonton and Saskatoon. Four members of the Department gave lectures at provincial and national conferences:

**Publications:**

C. Daniels, A.F. Holloway, "Comparison and Variations of the Speed of Radiographic Film", Radiology, 146, No. 1, pages 203-207, 1983

J.E. Aldrich, J.W. Andrew, H.B. Michaels, P.F. O'Brien, "Evaluation of the AECL Therac 25 25-MeV Linear Accelerator", Radiology, 149, 245, 1983.

S.A. Jackson, "Electrooculography", Encyclopedia of Physics in Medicine and Biology Pergaman Press, 1984.

**Lectures:**

CANADIAN ASSOCIATION OF RADIOLOGY, QUEBEC CITY, JUNE, 1983

*J.W. Andrew* -
"A Microcomputer-Based System for Radiotherapy Beam Compensator Design and Patient Contour Plotting."

*C. Daniels* -
"The Film-screen Selection: Experience of a Large Radiology Department".

NOVA SCOTIA ASSOCIATION OF RADIOLOGY HALIFAX, OCTOBER, 1983

*J. Aldrich* -
"Update on NMR Imaging"

*C. Daniels* -
"Selecting a Film-Screen System".

NOVA SCOTIA ASSOCIATION OF MEDICAL RADIATION TECHNOLOGISTS, DARTMOUTH, NOVEMBER, 1983

*J. Aldrich* -
"The International System",
"Radiation Protection in Radiation Oncology"

*J. Andrew* -
"Quality Control -Diagnostic Radiology", Part I

*C. Daniels* -
"Quality Control - Diagnostic Radiology", Part II

*S. Jackson* -
"Quality Assurance of Nuclear Medicine Equipment",
"Renogram Curve Analysis"

NOVA SCOTIA ASSOCIATION OF MEDICAL RADIATION TECHNOLOGISTS, TRURO, MAY, 1983

*J. Andrew* -
"Approaches to Quality Assurance in Diagnostic Radiology".

*C. Daniels* -
"Practical Quality Assurance"

# HEALTH RECORDS DEPARTMENT

| | |
|---|---|
| **Health Record Administrators** | **Thelma Croucher,** *Head*<br>Beverley Kaulback-Lewis, *Supervisor*<br>Jean James<br>Karen Starratt |
| **Health Record Technologists** | Glenys Jackman<br>Connie Woodland - *Term Position* |
| **General Records Office** | Ann Cooper<br>Beverley MacMillan<br>Brenda Redmond<br>Judy Swinamer |
| **Provincial Cancer Registry** | Clerise Smith<br>Arlene MacDonald - *Term Position* |
| **Reception and New Patient Referral** | Joyce Christie<br>Linda Eisenhauer<br>Gail Deveau |
| **Medical Secretaries And Transcription** | Bertha Furlong<br>Mary Hutchins<br>Patty Lively<br>Florence MacKenzie<br>Sheila Richardson<br>Dale Tibbo |
| **Department Steno** | Yvonne Van Dyk |
| **Integration Staff** | Suzanne Boudreau<br>Janet Ferguson<br>Tessa Giffin<br>Ardith Kyte<br>Susan MacVittie<br>Susan Rubarth<br>*Term positions* |

The Health Records Department is responsible for the collection, completion, accuracy, availability, qualitative and statistical analysis of health information in order to facilitate the evaluation and improvement of patient care, and to have records available for education, research and legal purposes.

During the past year our department has been actively involved in the planning for the implementation of the Foundation's Patient Information System, which is modelled very closely after the system in use in the Ontario Cancer Foundation. We will be implementing the Patient Enrollment and Case Registration Software (for clinic and Registry cases) in the near future; Medical Services Reporting, Patient Scheduling, and New Patient Referral, will be receiving their 'System Training' in early April 1984 and we hope to start inputting data on the system shortly thereafter. In anticipation of the oncoming Computer system, manual systems have been thoroughly reviewed and, where necessary, changes have been made; it is essential to have manual systems running smoothly prior to inputting data on system.

In the summer of 1983, a study on 'staffing requirements' was conducted within our department by a Health Records Consultant employed by the Department of Health and Thelma Croucher. This resulted in the development and on-going collection of necessary workload statistics, as well as approval for two term positions. The study recommended that six staff be hired to

integrate our previous four separate records systems into one Foundation record; the report outlined that our present Record staff were only able to integrate records as patients returned to clinic. A supervisory HRA position for the General Records Office and the Provincial Cancer Registry was created and filled early in 1984; this was not an additional position, but a restructuring of the present staff.

The Department staff were actively involved in the planning for the Foundation's Open House held on October 19, 1983. Those attending the Open House were shown through the various departments. In the Health Records department, staff were available to answer questions and posters were made in order to explain the function of each section and illustrate statistics collected; also our department prepared a film on Confidentiality.

The HRA's and HRT's in our department were given an opportunity to attend the Canadian Health Record Association conference held in Halifax on the 9th and 10th of June 1983. A tour of our Foundation facilities was arranged in conjunction with the conference. As well, throughout the year, Records staff were given the opportunity to attend lectures and short seminars relevant to their field.

**General Records Office**

There are approximately 55,000 Active and Inactive charts on site from 1953 to the present time.

Modern computer compatible furniture has been ordered which features sharing of terminals by staff who will be inputting data on the system on a daily basis. With weekly workload statistics of 735 incoming reports; an average of 250 charts prepared for clinic; approximately 200 enquiry functions, scheduling staff time on the system will have to be co-ordinated very closely.

Other staff functions are post clinic charts auditing of approximately 235 charts/week of which all new clinic cases are coded according to ICD-O. When the system is operational these new cases will be inputted on the Case Registration portion of the system.

Approximately 50 requests for information from outside hospitals or clinics are generated each week for patients being seen in the clinic. These reports include discharge summaries, operative and pathology reports.

Senior Health Records staff have been involved in completing reports for the National Study on Ca. of Endometrium; International Study on Gynaecological Ca. for Stockholm, Sweden; as well as other internal surveys.

Junior and senior students from the School of Health Record Science have participated in various studies this year, one of which was, "Method of Compilation and Tabulation of Foundation Statistics".

**Provincial Cancer Registry**

In Nova Scotia, cancer is reportable by law, therefore, outside agencies, where cancer is first diagnosed, are responsible for forwarding the required information to the 'Registry.' We also receive a copy of each Pathology Report with a malignant diagnosis. This serves as an excellent audit to determine if every required case has been forwarded to us.

In early 1984, a revised Provincial Cancer Registry form had been designed on which outside agencies are sending necessary information. This was designed to have comparable data to that which can be captured on 'the system.'

The Registry will benefit greatly from the implementation of a computer system.

Compilation of Statistics for Cancer Incidence in the Province of Nova Scotia is a vital function of the Registry.

**Patient Reception/Registration Desk**

The staff within this area are responsible for registering return patients when they arrive and scheduling return appointments prior to patients on daily radiation treatment). They also act as the main phone reception area for the clinic.

**New Patient Referral**

This position was established early in 1984 and has proven to be very beneficial for patients and staff, with new patients given the privacy and comfort of being interviewed in an area away from clinic activity.

A Patient Enrollment Form has been designed which closely models data which will be captured on the system. When the system is operational, data will be keyed directly on the system and the 'manual form' will only be needed during 'system down times'.

Addressograph cards are now being made up for all new and return patients coming to clinic; one card is made per patient and this stays with the chart for labelling purposes. Once the system is operational it is anticipated that the cards will be produced automatically.

**Medical Transcription Area**

Staff are responsible for transcribing dictated notes done by full time Foundation physicians as well as notes generated from follow-up clinics attended by Foundation Consultants. Presently we have a decentralized dictating system.

The staff transcribe approximately 430 clinic notes per week The secretaries are able to maintain a turnaround time of 24-48 hours for dictated notes. Copies of dictated notes are mailed to family and referring doctors. There is an average volume of 20,000 phone calls/year within this area.

# DIVISION OF MEDICINE

Dr. L.A. Fernandez - *Co-ordinator*
Dr. G.R. Langley
Dr. B. Sheridan

During this period, the Medical Clinic was staffed by 2 hematologists, namely, Drs. G.R. Langley and Brian Sheridan. The clinic was held weekly. And since both of them have a major interest in hematology, the majority of patients seen in this clinic were managed for hematological malignancies. Some of the cases were newly diagnosed, others were attending the clinic on a regular basis for treatment, and still others for periodic observation.

For all patients receiving chemotherapy, it is imperative that patient's status regarding blood counts is known prior to starting treatment. Therefore, one of the great advantages of having this clinic was that the patients could have their laboratory tests done on the same day they were seen by the physician.

# DIVISION OF GYNAECOLOGIC ONCOLOGY

Dr. R.C. Fraser, *Co-ordinator*
Dr. M.G. Tompkins
Dr. C. Tupper
Dr. S. C. Robinson

The Division of Gynaecologic Oncology, between April 1, 1983 and March 31, 1984, continues to be one of increasing activity. Members of this Division include Drs. M.G. Tomkins, W.R.C. Tupper, S.C. Robinson, and R.C. Fraser, all of whom are consultants to the Foundation in Gynaecologic Oncology. Representation from Radiation Oncology continues to be our colleagues of long-standing, Drs. Oscar Wong and John Filbee.

We believe a multidisciplinary approach for the gynaecologic cancer patient assures those patients of general evaluation, efficient investigation, appropriate treatment planning and an assured follow-up program.

The Gynaecologic Oncology Division has, for some time, actively pursued a multidisciplinary approach for the benefits of its patients. We believe that most patients in Nova Scotia, identified as having gynaecologic cancer, have the benefit of being involved with this group.

The Division is responsible for new patient treatment planning and follow-up clinics each Tuesday and Friday mornings. Approximately 2,000 patient visits occur each year to our clinics. Increasing numbers of new patients are now being referred from New Brunswick, Prince Edward Island and Newfoundland.

Clinical research is an ongoing activity of the Division in association with the Department of Obstetrics and Gynaecology of Dalhousie University. This consists of active participation in the National Cancer Institute Clinical Trials pertaining to ovarian cancer, the role of lymphangiography and CT scanning incervical cancer. Recently, in the Nova Scotia Bulletin of the Medical Society, Drs. W.R.C. Tupper and M.G. Tompkins submitted their report which dealt with carcinoma of the cervix in Nova Scotia. It stressed the need for more effective screening procedures to enable the earlier diagnosis of cervical cancer.

At the Gynaecologic Oncology Follow-up Clinics, many paramedical services are active. These include nutritional counselling, social services and the participation of volunteers of the Nova Scotia Division of the Canadian Cancer Society for the benefit of our patients. We are continuing to respond to the increasing awareness of the psychosocial problems faced by these women and are developing programs to meet these needs; for example, the issue of sexuality after treatment for gynaecologic cancer.

I would like to express our appreciation to the Nova Scotia Cancer Treatment and Research Foundation for its co-operation in the past and that anticipated in the future. In particular, I thank all physicians in the province who support our programs and encourage us to develop new ones in order to benefit their patients.

# DIVISION OF UROLOGY

*Dr. P Belitsky - Co-ordinator*

The Urology Tumor Clinic has steadily increased its activities during the past few years. During the year covering this Annual Report, 381 patient visits were made by 126 patients. The Clinic provides the following patient services:

1. A comprehensive one-stop follow up facility for patients with urologic cancer. All consultations and tests are performed in one day on an outpatient basis in most cases, without the need for hospital admission.

2. Evaluation of specific problems related to urologic cancer in patients ordinarily followed elsewhere in the province.

3. Active treatments, specifically topical and intravenous chemotherapy.

In addition, the Clinic serves important teaching and research functions. It is attended regularly by students and residents who see the patients together with the Clinic Director, Doctor Philip Belitsky, of the Department of Urology. An active Research Program is in progress evaluating the effectiveness of instilling particular medication into the bladder of patients with certain types of bladder cancer to prevent recurrence of their disease. The medication used is BCG (Bacille Calmette Guerin), the same agent used to immunize against tuberculosis. For patients treated in this way in our Clinic, the recurrence rate has dropped from 85% to 13%.

# DIVISION OF DERMATOLOGY

Dr. J.B. Ross - *Co-ordinator*
Dr. J. Klotz
Dr. A.H. Murray

The Skin Neoplasm Clinic is currently one weekly session of two to three hours attended by Doctors J.B. Ross and J. Klotz, on alternate weeks accompanied by a Dermatology resident. A radiotherapist, Dr. M. Cunningham, is usually in constant attendance. With his presence, the concurrent operation of a Surgery Clinic (Dr. S. Norvell) and a Haematology Clinic (Dr. Ross Langley or Deputy) as well as the availability of consultant Oncologists, a true interdisciplinary consultation environment exists.

The availability of a fully equipped outpatient operating room and experienced qualified nursing staff allows most procedures to be performed immediately as soon as the need arises.

This year has seen the development of Electron Beam treatment to the point that our first patients with Mycosis Fungoides can soon be treated, thus, avoiding the necessity of them having to be sent to Hamilton, Ontario, or other centres for treatment.

**Statistics**

Detailed breakdown not available for the year.

Number of new patients - III.

# DISTRIBUTION OF NEW CANCERS BY SITE, SEX AND AGE GROUP — 1979, 1980, 1981

| SITE | Sex | 0-9 | | | 10-19 | | | 20-29 | | | 30-39 | | | 40-49 | | | 50-59 | | | 60-69 | | | 70-79 | | | 80-89 | | | 90 + | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 79 | 80 | 81 | 79 | 80 | 81 | 79 | 80 | 81 | 79 | 80 | 81 | 79 | 80 | 81 | 79 | 80 | 81 | 79 | 80 | 81 | 79 | 80 | 81 | 79 | 80 | 81 | 79 | 80 | 81 | 79 | 80 | 81 |
| Lip | M | | | | | | | | | | | | 2 | 2 | 3 | | 7 | 6 | 4 | 5 | 9 | | 9 | 4 | 5 | | 1 | 2 | 1 | | | 24 | 23 | 13 |
| | F | | | | | | | | | 1 | | | | | | 1 | | 1 | 1 | | | | | 1 | | 2 | | | | | | 2 | 2 | 4 |
| Tongue | M | | | | | | | | | 1 | | 2 | | 1 | | 3 | 1 | 1 | 1 | 4 | 7 | 3 | 1 | | 2 | 1 | 1 | 2 | | | | 6 | 12 | 12 |
| | F | | | | | | | | | | | | | | | | | | | 1 | 1 | 3 | 1 | 1 | 2 | 2 | 1 | 2 | | | 1 | 4 | 3 | 6 |
| Salivary Gland | M | | | | | | | 1 | | | | | | | 1 | | 1 | 1 | 1 | | 1 | 1 | 2 | 1 | 1 | | 1 | | | | | 4 | 5 | 3 |
| | F | | | | | | | | | | | | | | | | 1 | | | | | | 1 | | 2 | 1 | | 1 | | | | 3 | | 3 |
| Gum | M | | | | | | | | | | | | | | | | | | | | 1 | | 1 | | | 2 | | | | | | 3 | 1 | — |
| | F | | | | | | | | | | | | | | | | | | | 1 | 1 | | 2 | | | | | | | | | 3 | 1 | — |
| Floor of Mouth | M | | | | | | | | | | | | | | 3 | | | 2 | 3 | | 1 | 3 | 1 | 3 | 1 | | 1 | 1 | | | | 1 | 10 | 6 |
| | F | | | | | | | | | | | | | | | | 1 | 1 | 1 | 2 | 1 | | | | | 1 | | | | | | 4 | 2 | 1 |
| Other & Unspecified parts of Mouth | M | | | | | | | | | | | | | 1 | | | 3 | 1 | 1 | 1 | | | 1 | | | | | 1 | | | | 6 | 1 | 2 |
| | F | | | | | | | | | | | | | | 1 | 1 | | 1 | 1 | | | 1 | | | | 1 | | | 1 | | | 1 | 3 | 4 |
| Oropharynx | M | | | | | | | | | | | | | 1 | | | | 2 | | 2 | 2 | 1 | 1 | 1 | | | 1 | | | | | 4 | 6 | 1 |
| | F | | | | | | | | | | | | | | | | | | | | 3 | 1 | | | | | | | | | | — | 3 | 1 |
| Nasopharynx | M | | | | | | | | | | | | | | | | 2 | | 1 | 1 | 2 | 1 | | | | | | | | | | 3 | 2 | 2 |
| | F | | | | | | | | | | | | | | | 2 | | | | 1 | 2 | 2 | | | | | | 1 | | | | 1 | 2 | 5 |
| Hypopharynx | M | | | | | | | | | | | | | | | | | 2 | | 2 | 1 | 2 | 1 | 1 | | 1 | | 1 | | | | 4 | 4 | 3 |
| | F | | | | | | | | | | | | | | | | | | | 1 | | 1 | 1 | | | | | | | | | 1 | 1 | 1 |
| Pharynx Unspecified | M | | | | | | | | | | | | | | | | 1 | | 1 | | | | | | | | | | | | | 1 | | 1 |
| | F | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 1 | | | | | | 1 | 1 | 1 |
| Esophagus | M | | | | | | | | | | | | | 1 | | 2 | 3 | 3 | 5 | 6 | 8 | 4 | 2 | 4 | 1 | 5 | 2 | 4 | | | | 17 | 17 | 16 |
| | F | | | | | | | | | | | | | | | 1 | 2 | 2 | | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | | | 7 | 8 | 6 |
| Stomach | M | | | | | | | | | | | | 2 | 2 | 3 | 6 | 16 | 13 | 9 | 25 | 18 | 20 | 17 | 21 | 10 | 12 | 6 | 7 | 1 | 1 | | 73 | 62 | 54 |
| | F | | | | | | | | | | | 3 | | 3 | | 1 | 3 | 5 | 4 | 13 | 5 | 7 | 8 | 13 | 9 | 12 | 5 | 6 | 1 | | 2 | 40 | 31 | 29 |
| Small Intestine (including Duodenum) | M | | | | | | | | | | | | | 2 | | 1 | | | | 1 | 1 | 1 | 2 | | | | | | | | | 5 | 1 | 2 |
| | F | | | | | | | | | 1 | | | | | | | 1 | 1 | | 1 | 1 | | 1 | | | | | | | | | 3 | 3 | 1 |
| Large Intestine (Except Rectum) | M | | | | | 1 | | 1 | | | 4 | 2 | 7 | 4 | 5 | 7 | 16 | 20 | 15 | 39 | 42 | 31 | 44 | 38 | 32 | 22 | 12 | 18 | 1 | 1 | 2 | 131 | 121 | 112 |
| | F | | | | | | | | | | 3 | 4 | 1 | 9 | 8 | 7 | 11 | 27 | 16 | 41 | 51 | 35 | 46 | 48 | 40 | 28 | 33 | 23 | 5 | 5 | 2 | 143 | 176 | 124 |
| Rectum & Rectosigmoid Junction | M | | | | | | | | 1 | | | | | 2 | | 7 | 10 | 20 | 10 | 24 | 24 | 23 | 18 | 13 | 14 | 5 | 8 | 5 | | 2 | | 59 | 68 | 59 |
| | F | | | | | | | 1 | | | 1 | 1 | 1 | 8 | 11 | 2 | 10 | 12 | 9 | 27 | 10 | 13 | 15 | 13 | 14 | 7 | 10 | 4 | 1 | 1 | 3 | 70 | 58 | 46 |
| Liver & Intrahepatic Bile Ducts | M | | | | | 1 | | | | | | | | 1 | | | 3 | 1 | 1 | 3 | 1 | 1 | | | 2 | | | 2 | | | | 7 | 3 | 6 |
| | F | | | | | | | | | | | 2 | | | | | | | | 2 | 3 | | | 1 | | | | | | | | 2 | 6 | 1 |
| Gallbladder & Bile Ducts | M | | | | | | | | | | 2 | 1 | 1 | 1 | | | | | | 5 | 4 | 2 | 1 | 2 | 2 | | 3 | 1 | | | | 9 | 10 | 6 |
| | F | | | | | | | | | | 1 | 2 | | | | | | 1 | | 6 | 2 | 1 | | 2 | 1 | 1 | 1 | | 1 | | | 8 | 9 | 2 |
| Pancreas | M | | | | | | 1 | | | | 1 | | | 3 | | 2 | 5 | 2 | 2 | 15 | 11 | 5 | 7 | 6 | 8 | 5 | 5 | 3 | | 2 | | 38 | 24 | 23 |
| | F | | | | | | | | | | | | | 2 | 4 | 2 | 6 | 2 | 2 | 4 | 12 | 9 | 17 | 12 | 7 | 1 | 3 | 3 | 1 | | | 31 | 33 | 23 |
| Peritoneum and Retroperitoneal Tissue | M | | | | | | | | 1 | | | 1 | | | | | 1 | 1 | 1 | | 2 | 1 | | | | | | | | | | 2 | 4 | 2 |
| | F | | | | | | | | | | 1 | | | | | 1 | | 2 | | | 1 | 1 | | 1 | 1 | | 1 | 2 | | | | 2 | 6 | 2 |
| Unspecified Digestive Organs | M | — | | | — | | | — | | | — | | | — | | | — | | | — | | | — | 1 | | — | | | — | | | — | 1 | — |
| | F | — | | | — | | | — | | | — | | | — | | | — | | | — | 1 | | — | | | — | | | — | | | — | 1 | — |
| Nose, Nasal Cavities, Middle Ear and accessory sinuses | M | | | | | | | | | | | | | | | | 2 | 1 | | | 1 | 1 | | 1 | | | 3 | | | | | 2 | 6 | 1 |
| | F | | | | | | | | | | | | | | | | 1 | | 1 | 1 | | | 2 | 1 | | | | | | | | 5 | 1 | 1 |
| Larynx | M | | | | | | | | | | 2 | 1 | 3 | 8 | 6 | 12 | 16 | 13 | 14 | 8 | 12 | 5 | 1 | 2 | 2 | | | | | | 33 | 34 | 36 |
| | F | | | | | | | | | | 2 | 3 | | 1 | | | | 1 | 2 | | | | | | | | | | | | | 4 | 4 | 2 |
| Trachea-Bronchus & Lung (& Pleura 1981) | M | | | | | | | 1 | 1 | 1 | 1 | 3 | 2 | 13 | 14 | 13 | 66 | 78 | 53 | 100 | 104 | 102 | 58 | 74 | 68 | 16 | 8 | 19 | 1 | 1 | 1 | 256 | 283 | 259 |
| | F | | | | | | | 1 | | | 2 | 2 | 3 | 13 | 9 | 7 | 13 | 31 | 16 | 27 | 42 | 28 | 14 | 19 | 10 | 3 | 4 | 2 | 1 | | 1 | 74 | 107 | 67 |
| Other and unspecified respiratory organs (1979, 1980) Thymus, Heart, and Mediastinum (1981) | M | | | | | | 1 | | | | | | | | | | 1 | | | | | | | 1 | | | | 1 | | | 1 | 1 | 2 |
| | F | | | | | | | | | | | | 1 | | | | | | | 1 | | | | | | | | | | | | 1 | — | 1 |
| Bone | M | | | | 2 | | | 1 | 1 | | 2 | | | | | | | | | 2 | | | | 1 | | | | | | | | 7 | 2 | — |
| | F | 1 | 1 | 1 | | | | 1 | 1 | | | | 1 | | | 1 | | 1 | | 2 | 1 | | | | 2 | | | | | | | 4 | 4 | 5 |
| Connective and other soft tissue | M | | | | | 1 | | 1 | | 1 | | | | 1 | 1 | | | 1 | 1 | | 1 | 1 | | 1 | 3 | | | 1 | | | | 3 | 4 | 5 |
| | F | | | | | | | | 1 | 1 | 1 | 2 | | | | 1 | | 2 | 1 | 1 | 2 | | 1 | 1 | | | | 1 | | | | 3 | 10 | 4 |
| Malignant Melanoma of skin | M | | | | | | | 3 | 1 | 1 | 3 | 2 | 3 | 3 | 2 | 1 | 3 | 3 | 4 | 1 | 3 | 5 | 2 | 3 | | 2 | | 1 | | | | 18 | 14 | 14 |
| | F | | | | | 1 | | 3 | 3 | 3 | 4 | 6 | 6 | 3 | 1 | 2 | 6 | 3 | 4 | 5 | 4 | 3 | 3 | 2 | 4 | | | 2 | | 1 | | 24 | 20 | 25 |
| Malignant neoplasm of skin | M | | | | | 1 | | | 1 | 3 | 7 | 13 | 11 | 15 | 24 | 9 | 48 | 49 | 38 | 77 | 102 | 71 | 55 | 68 | 70 | 26 | 45 | 37 | 7 | 11 | 3 | 237 | 314 | 242 |
| | F | | | | | 2 | | 1 | | 3 | 4 | 12 | 9 | 9 | 14 | 10 | 35 | 35 | 21 | 45 | 44 | 45 | 40 | 30 | 35 | 26 | 34 | 24 | 7 | 6 | 3 | 167 | 177 | 150 |
| Breast | M | | | | | | | | | | | | | | | 1 | | | 1 | | 1 | | 1 | 2 | | | | | | | | 1 | 4 | — |
| | F | | | | | | | 3 | 5 | 2 | 14 | 23 | 27 | 47 | 41 | 49 | 84 | 73 | 71 | 82 | 87 | 73 | 55 | 54 | 53 | 25 | 28 | 29 | 3 | 6 | 1 | 313 | 317 | 315 |
| Uterus, NOS 1981 | F | — | — | | — | — | | — | — | 2 | — | — | | — | — | | — | — | | — | — | 1 | — | — | 1 | — | — | 1 | — | — | | — | — | 5 |
| Cervix uteri | F | | | | 2 | | 1 | 38 | 50 | 28 | 64 | 55 | 59 | 15 | 22 | 27 | 21 | 12 | 10 | 8 | 8 | 13 | 4 | 6 | 4 | 1 | 3 | 2 | | 1 | | 153 | 157 | 144 |
| Chorionepithelioma | F | | — | | | — | | 1 | — | | | | | | | | | | | | | | | | | | | | | | 1 | — | — |
| Other Malignant Neoplasm of Uterus | F | | | | | | | | 1 | | 2 | 2 | | 3 | 4 | 3 | 29 | 18 | 12 | 25 | 26 | 16 | 13 | 17 | 6 | 5 | 7 | 1 | | | 1 | 77 | 75 | 39 |
| Ovary, Fallopian Tube & Broad Ligament | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other and Unspecified Female | F | | | | | | 1 | 1 | 2 | 1 | 2 | 2 | 5 | 10 | 7 | 4 | 13 | 10 | 8 | 14 | 17 | 18 | 8 | 6 | 11 | 5 | 6 | 3 | | 1 | | 53 | 51 | 49 |
| Genital Organs | F | | | | | 1 | | 1 | 2 | | 1 | 2 | | 5 | 1 | | 2 | 2 | 4 | 3 | 3 | 1 | 6 | 4 | 5 | 8 | 2 | 4 | | 1 | | 26 | 18 | 14 |
| Prostate | M | | | | | | | | | | | | | | | | 10 | 9 | 6 | 44 | 53 | 44 | 72 | 80 | 60 | 31 | 36 | 30 | 7 | 5 | | 164 | 183 | 140 |
| Testis | M | | 1 | | | 1 | 2 | 2 | 5 | 11 | 3 | 6 | 7 | 5 | 4 | 3 | | | 1 | | | | 1 | | 1 | | | | | | | 11 | 17 | 25 |
| Other and Unspecified Male Genital Organs | M | | | | | | | | | | | | | 2 | | | | 1 | | 1 | 2 | | 3 | 2 | 1 | | 2 | | 1 | | | 7 | 7 | 1 |
| Bladder | M | | | | | | | 1 | | | 2 | 4 | 3 | 2 | 4 | 3 | 8 | 8 | 11 | 25 | 31 | 27 | 32 | 24 | 26 | 12 | 16 | 11 | 5 | 2 | 3 | 87 | 87 | 84 |
| | F | | | | | | | | | 1 | | | 2 | 1 | 1 | 1 | 3 | 2 | 3 | 15 | 9 | 8 | 8 | 11 | 7 | 9 | 4 | 2 | 1 | 2 | 1 | 37 | 29 | 25 |
| Kidney & Other Urinary Organs | M | | | | | | | 1 | | | | 2 | 1 | 3 | 3 | 1 | 8 | 3 | 8 | 4 | 11 | 5 | 9 | 7 | 7 | 2 | 2 | 3 | | | | 26 | 26 | 25 |
| | F | | | | | | | | | 2 | | | 3 | 1 | 1 | | 5 | 4 | 3 | 7 | 4 | 5 | 3 | 8 | 2 | | 1 | 1 | | | | 16 | 16 | 16 |
| Eye | M | | | | | | | | | | | | | | | | 2 | | | | | | 2 | | | | | | | | | 4 | — | — |
| | F | | 1 | | | | | | | | | | | | | | | 1 | 1 | | | | | | 1 | | | | | | | — | 2 | 2 |
| Brain | M | 2 | 1 | 1 | 1 | 2 | | 1 | 1 | 4 | | 3 | 3 | 4 | 3 | 4 | 4 | 10 | 2 | 9 | 5 | 8 | 3 | 8 | 2 | | | | | | | 24 | 33 | 24 |
| | F | | | | | | 3 | 1 | 1 | | 1 | | 2 | 5 | 1 | | 2 | 2 | 3 | 4 | 7 | 4 | 4 | 3 | | | | | | | | 17 | 14 | 12 |
| Other Parts of the Nervous System | M | 1 | | 1 | | | 1 | | | | 2 | | | | | 1 | | | | | | | | | | | | | | | | 3 | — | 3 |
| | F | 1 | | | | | 1 | | | 1 | | | | | | | | | | | 2 | | | 1 | | 1 | | | | | | 2 | 4 | 2 |
| Thyroid Gland | M | | | | | | | | 2 | | 1 | 1 | | 1 | 1 | 2 | 1 | | 1 | | 1 | | 1 | 2 | 1 | 1 | | | | | | 5 | 7 | 4 |
| | F | | | | | | 1 | 2 | 2 | 3 | 1 | 2 | 1 | 4 | 2 | 1 | 5 | 1 | 4 | 2 | 3 | 2 | 1 | | 3 | 1 | | 1 | | | | 16 | 10 | 16 |
| Other Endocrine Glands | M | | | | | | | | | | | | | 1 | | 1 | | 1 | | | | | | | | | | | | | | 1 | 1 | 1 |
| | F | | | | | | | | 1 | | | | | | | | 1 | | | | 1 | 1 | | | | | | | | | | 1 | 2 | 1 |
| Ill Defined Sites | M | | | | | | | | | | | | | | | 1 | | 1 | | | | | | | | | | | | | | — | 1 | 1 |
| | F | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | — | — | — |
| Lymphoma 1981 | M | | | | | | | | | | | | | | | 1 | | | 6 | | | 5 | | | 2 | | | 3 | | | | — | — | 17 |
| | F | | | | | | | | | 1 | | | 1 | | | | | | 3 | | | 3 | | | 3 | | | 2 | | | | — | — | 13 |
| Site Unspecified | M | | | | | | | | | | 2 | 2 | | 4 | 4 | 3 | 9 | 7 | 8 | 10 | 5 | 3 | 2 | 3 | 2 | 1 | | | | | 28 | 21 | 14 |
| | F | | | | | | | | 2 | | 1 | | 1 | 2 | | 1 | 6 | 3 | 3 | 2 | 4 | 1 | 3 | 4 | | | | | | | | 14 | 13 | 6 |
| Lymphosarcoma and Reticulum Cell Sarcoma | M | | | | | | | 2 | | | 5 | 2 | | 5 | 2 | 1 | 1 | 9 | | 7 | 1 | 4 | 5 | 6 | | | | | | | | 25 | 20 | 5 |
| | F | | | | | 1 | | 2 | 1 | 1 | | 1 | | | 1 | | 4 | 2 | | 9 | 3 | 1 | 6 | 2 | | 3 | | 1 | | | | 25 | 10 | 3 |
| Hodgkin's Disease | M | 1 | | | 3 | 2 | 1 | 3 | 4 | 1 | 1 | 5 | | 4 | 2 | 3 | 1 | | | | 6 | 2 | 1 | 2 | | | | | | | | 14 | 21 | 7 |
| | F | | | | 3 | 1 | 3 | 2 | 3 | | | 2 | | | 1 | 2 | | 2 | | | | | | 3 | | | 2 | | | | | 5 | 14 | 5 |
| Other Lymphoid Tissue (1979, 1980) | M | | | | | | | | | | 1 | | | | | | 2 | 1 | | 2 | 1 | | | | | | | | | | | 5 | 2 | — |
| | F | | | | | | | | 1 | | 1 | | | 1 | | | 1 | | | | 1 | 1 | | | | 2 | 1 | | 1 | | | 6 | 4 | — |
| Multiple Myeloma | M | | | | | | | | | | | | 2 | 1 | 2 | 1 | 2 | 2 | 1 | 5 | 2 | 6 | 5 | 2 | 3 | | 2 | 1 | | 1 | 1 | 12 | 11 | 13 |
| | F | | | | | | | | | | | | 1 | | 3 | | | | | 5 | 2 | 4 | 4 | 4 | 6 | | | | | | | 9 | 9 | 11 |
| Lymphatic Leukemia | M | 3 | 3 | 2 | | | 2 | 1 | 1 | 1 | 1 | | | | | 1 | 1 | | 1 | 1 | 2 | 2 | 2 | 6 | 2 | 1 | 1 | | 1 | | | 10 | 14 | 10 |
| | F | 1 | 2 | 1 | | 3 | | 1 | 2 | | | | | | 1 | | | 2 | | | 2 | | 2 | 2 | | 2 | 1 | | | | 6 | 12 | 2 |
| Myeloid Leukemia | M | | | | | | 1 | | 2 | 1 | | | 2 | 1 | | 1 | 2 | 1 | 1 | 5 | 2 | 3 | 1 | 1 | 1 | 2 | | 1 | | | | 11 | 6 | 11 |
| | F | | | | | | | | | | | 1 | | 1 | 4 | | 2 | 1 | | 1 | 3 | 1 | 1 | 2 | 1 | 1 | | 1 | | | 1 | 6 | 11 | 4 |
| Monocytic Leukemia (1979, 1980) | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | — | — | — |
| | F | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | 1 | — | — |
| Other and Unspecified Leukemia | M | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 2 | 1 |
| | F | | | | | | | | | | 1 | | | | | | | | | 1 | | | | 1 | 1 | | | 1 | | | | 2 | — | 1 |
| Total All Sites | M | 7 | 5 | 4 | 6 | 9 | 9 | 20 | 19 | 25 | 34 | 47 | 43 | 86 | 81 | 78 | 246 | 262 | 203 | 441 | 482 | 405 | 378 | 403 | 334 | 152 | 164 | 156 | 27 | 26 | 13 | 1394 | 1499 | 1270 |
| | F | 3 | 4 | 2 | 5 | 9 | 10 | 59 | 75 | 47 | 104 | 125 | 126 | 144 | 141 | 129 | 265 | 260 | 200 | 366 | 371 | 304 | 270 | 278 | 244 | 155 | 154 | 122 | 23 | 25 | 18 | 1394 | 1442 | 1202 |
| Total | | 10 | 9 | 6 | 11 | 18 | 19 | 79 | 94 | 72 | 138 | 172 | 169 | 229 | 222 | 207 | 511 | 522 | 403 | 807 | 853 | 709 | 648 | 681 | 578 | 307 | 316 | 278 | 50 | 51 | 31 | 2788 | 2940 | 2472 |

* This does not include patients registered after March 31/82.

# INCIDENCE OF CANCER PER 100,000 POPULATION 1979, 1980, 1981

| Site | Total Population (1) | | | | | | Population at Risk (2) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1979 | | 1980 | | 1981 | | 1979 | | 1980 | | 1981 | |
| | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female | Male | Female |
| Lip | 5.7 | 0.5 | 5.5 | 0.5 | 3.1 | 0.9 | 18.3 | 1.4 | 17.4 | 1.4 | 7.9 | 2.0 |
| Tongue | 1.9 | 0.9 | 2.9 | 0.7 | 2.9 | 1.9 | 6.1 | 2.8 | 9.1 | 2.0 | 7.9 | 5.2 |
| Salivary Gland | 0.9 | 0.7 | 1.2 | — | 0.7 | 0.7 | 3.1 | 2.1 | 3.8 | — | 2.2 | 2.0 |
| Gum | 0.7 | 0.7 | 0.2 | 0.2 | — | — | 2.3 | 2.1 | 0.8 | 0.7 | — | — |
| Floor of Mouth | 0.2 | 0.9 | 2.4 | 0.5 | 1.9 | 0.2 | 0.8 | 2.7 | 7.6 | 1.4 | 5.8 | 0.7 |
| Other & Unspecified Parts of Mouth | 1.4 | 0.2 | 0.2 | 0.7 | 0.5 | 0.9 | 4.6 | 0.7 | 0.8 | 2.0 | 1.4 | 2.6 |
| Oropharynx | 0.9 | — | 1.4 | 0.7 | 0.2 | 0.2 | 3.1 | — | 4.5 | 2.0 | 0.7 | 0.7 |
| Nasopharynx | 0.7 | 0.2 | 0.5 | 0.5 | 0.5 | 1.2 | 2.3 | 0.7 | 1.5 | 1.4 | 1.4 | 3.3 |
| Hypopharynx | 0.9 | 0.2 | 0.9 | 0.2 | 0.7 | 0.2 | 3.1 | 0.7 | 3.0 | 0.7 | 2.2 | 0.7 |
| Pharynx Unspecified | 0.2 | 0.2 | — | 0.2 | 0.2 | 0.2 | 0.8 | 0.7 | — | 0.7 | 0.7 | 0.7 |
| Esophagus | 4.0 | 1.6 | 4.1 | 1.9 | 3.8 | 1.4 | 12.9 | 4.8 | 12.8 | 5.4 | 11.6 | 3.9 |
| Stomach | 17.3 | 9.4 | 14.8 | 7.3 | 12.9 | 6.8 | 55.7 | 27.5 | 46.8 | 21.1 | 37.6 | 18.9 |
| Small Intestine (Including Duodenum) | 1.2 | 0.7 | 0.2 | 0.7 | 0.5 | 0.2 | 3.8 | 2.1 | 0.8 | 2.0 | 1.4 | — |
| Large Intestine (Except Rectum) | 31.0 | 33.6 | 28.9 | 41.3 | 26.7 | 28.9 | 99.9 | 98.4 | 91.4 | 119.6 | 75.8 | 80.0 |
| Rectum & Rectosigmoid Junction | 13.9 | 16.5 | 16.2 | 13.6 | 14.1 | 10.7 | 45.0 | 40.8 | 51.4 | 39.4 | 42.6 | 29.2 |
| Liver & Intrahepatic Bile Ducts | 1.7 | 0.5 | 0.7 | 1.4 | 1.4 | 0.2 | 5.3 | 1.4 | 2.3 | 4.1 | 4.3 | 0.7 |
| Gallbladder and Bile Ducts | 2.3 | 1.9 | 2.4 | 2.1 | 1.4 | 0.5 | 6.9 | 5.5 | 7.6 | 6.1 | 4.3 | 1.3 |
| Pancreas | 8.5 | 7.3 | 5.7 | 7.7 | 5.5 | 5.4 | 27.5 | 21.3 | 18.1 | 22.4 | 15.9 | 15.0 |
| Peritoneum and Retroperitoneal Tissue | 0.5 | 0.5 | 0.9 | 1.4 | 0.5 | 0.5 | 1.5 | 1.4 | 3.0 | 4.1 | 1.4 | 1.3 |
| Unspecified Digestive Organs | — | — | 0.2 | 0.2 | — | — | — | — | 0.8 | 0.7 | — | — |
| Nose, Nasal Cavities, Middle Ear & Sinuses | 0.5 | 1.2 | 1.4 | 0.2 | 0.2 | 0.2 | 1.5 | 3.4 | 4.5 | 0.7 | 0.7 | 0.7 |
| Larynx | 7.8 | 0.9 | 8.1 | 0.9 | 8.6 | 0.5 | 25.2 | 2.8 | 25.7 | 2.7 | 26.0 | 1.3 |
| Trachea, Bronchus and Lung | 60.6 | 17.4 | 67.5 | 25.1 | 61.4 | 15.6 | 195.2 | 50.9 | 213.7 | 72.7 | 184.1 | 41.6 |
| Other & Unspecified Respiratory Organs | 0.2 | 0.2 | 0.2 | — | 0.7 | 0.2 | 0.8 | 0.7 | 0.8 | — | 1.4 | — |
| Bone | 1.7 | 0.9 | 0.5 | 0.9 | — | 1.2 | 5.3 | 2.8 | 1.5 | 2.7 | — | 2.0 |
| Connective & Other Soft Tissue | 0.7 | 0.7 | 0.9 | 2.3 | 1.2 | 0.9 | 2.3 | 2.1 | 3.0 | 6.8 | 2.9 | 2.0 |
| Malignant Melanoma of Skin | 4.3 | 5.6 | 3.3 | 4.7 | 3.3 | 5.8 | 13.7 | 16.5 | 10.6 | 13.6 | 7.2 | 10.4 |
| Malignant Neoplasm of Skin | 56.1 | 39.3 | 74.9 | 41.5 | 57.6 | 35.0 | 180.8 | 114.9 | 237.2 | 120.2 | 164.7 | 89.7 |
| Breast | 0.2 | 73.6 | 0.9 | 74.4 | — | 73.6 | 0.8 | 215.4 | 3.0 | 215.4 | — | 186.0 |
| Cervix Uteri* | — | 35.9 | — | 36.9 | — | 33.6 | — | 54.7 | — | 55.2 | — | 49.4 |
| Chorionepithelioma | — | 0.2 | — | — | — | — | — | 0.7 | — | — | — | — |
| Other Malignant Neoplasm of Uterus | — | 18.1 | — | 17.6 | — | 10.3 | — | 52.9 | — | 50.9 | — | 27.3 |
| Ovary, Fallopian Tube and Broad Ligament | — | 12.5 | — | 11.9 | — | 11.4 | — | 36.5 | — | 34.6 | — | 27.3 |
| Other & Unspecified Female Genital Organs | — | 6.1 | — | 4.2 | — | 3.3 | — | 17.9 | — | 12.2 | — | 9.1 |
| Prostate | 38.8 | — | 43.7 | — | 33.3 | — | 125.5 | — | 138.2 | — | 101.1 | — |
| Testis | 2.6 | — | 4.1 | — | 5.9 | — | 8.4 | — | 12.8 | — | 3.6 | — |
| Other & Unspecified Male Genital Organs | 1.7 | — | 1.7 | — | 0.2 | — | 5.3 | — | 5.3 | — | 0.7 | — |
| Bladder | 20.6 | 8.7 | 20.7 | 6.8 | 20.0 | 5.9 | 66.4 | 25.5 | 65.7 | 19.7 | 58.5 | 14.3 |
| Kidney and Other Urinary Organs | 6.2 | 3.8 | 6.7 | 4.2 | 5.9 | 3.7 | 19.8 | 11.0 | 21.1 | 12.2 | 17.3 | 7.2 |
| Eye | 0.9 | — | — | 0.5 | — | 0.5 | 3.1 | — | — | 1.4 | — | 1.3 |
| Brain | 5.7 | 3.9 | 7.9 | 3.3 | 5.7 | 2.8 | 18.3 | 11.7 | 24.9 | 9.5 | 11.6 | 4.6 |
| Other Parts of Nervous System | 0.7 | 0.5 | — | 0.9 | 0.7 | 0.5 | 2.3 | 1.4 | — | 2.7 | 0.7 | — |
| Thyroid Gland | 1.2 | 3.8 | 1.7 | 2.3 | 0.9 | 3.7 | 3.8 | 11.0 | 5.3 | 6.8 | 2.9 | 7.2 |
| Other Endocrine Glands | 0.2 | 0.2 | 0.2 | 0.5 | 0.2 | 0.2 | 0.8 | 0.7 | 0.7 | 1.4 | 0.7 | 0.7 |
| Ill-Defined Sites | — | — | 0.2 | — | 0.2 | — | — | — | 0.7 | — | 0.7 | — |
| Site Unspecified | 6.6 | 3.3 | 5.0 | 3.1 | 3.3 | 1.4 | 21.4 | 9.6 | 15.9 | 8.8 | 10.1 | 3.9 |
| Lymphosarcoma & Reticulum Cell Sarcoma | 5.9 | 5.9 | 4.8 | 2.3 | 1.2 | 0.7 | 19.1 | 17.2 | 15.1 | 6.8 | 3.6 | 1.3 |
| Hodgkin's Disease | 3.3 | 1.2 | 5.0 | 3.3 | 1.7 | 1.2 | 10.7 | 3.4 | 15.9 | 9.5 | 3.6 | 1.3 |
| Other Lymphoid Tissue | 1.2 | 1.4 | 0.5 | 0.9 | 4.0 | 3.0 | 3.8 | 4.1 | 1.5 | 2.7 | 12.2 | 7.2 |
| Multiple Myeloma | 2.8 | 2.1 | 2.6 | 2.1 | 3.1 | 2.6 | 9.2 | 6.1 | 8.3 | 6.1 | 9.4 | 7.2 |
| Lymphatic Leukemia | 2.4 | 1.4 | 3.3 | 2.8 | 2.4 | 0.5 | 7.6 | 4.1 | 10.6 | 8.2 | 3.6 | 0.7 |
| Myeloid Leukemia | 2.6 | 1.4 | 1.4 | 2.6 | 2.6 | 0.9 | 8.4 | 4.1 | 4.5 | 7.5 | 5.0 | 2.6 |
| Monocytic Lukemia | — | 0.2 | — | — | — | — | — | 0.7 | — | — | — | — |
| Other and Unspecified Leukemia | 0.5 | 0.5 | 0.5 | — | 0.2 | 0.2 | 1.5 | 1.4 | 1.5 | 0.7 | 0.7 | 0.7 |
| *Total — All Sites* | *329.9* | *327.8* | *357.3* | *338.5* | *302.5* | *280.7* | *1063.6* | *901.1* | *1131.5* | *1031.5* | *858.8* | *661.4* |
| Total — All Sites (Both Sexes) | 328.9 | | 347.8 | | 291.5 | | 922.6 | | 946.7 | | 755.2 | |

**Notes:**

(1). Total Population based on the estimated population of Nova Scotia.

(2) Population at Risk is 40 years of age or older except for * 20 years of age and older.

# CANCER TREATMENT AND RESEARCH FOUNDATION OF NOVA SCOTIA
# FINANCIAL STATEMENTS

Year Ended March 31, 1984

## AUDITOR'S REPORT

To the Chairman and Members
of the Cancer Treatment and
Research Foundation of Nova Scotia

I have examined the balance sheet of the Cancer Treatment and Research Foundation of Nova Scotia as at March 31, 1984 and the statements of general fund revenue and expense and continuity of special fund for the year then ended. My examination was made in accordance with generally accepted auditing standards and accordingly, included such tests and other procedures as I considered necessary in the circumstances.

In my opinion, these financial statements present fairly the financial position of the Foundation as at March 31, 1984 and the results of its operations for the year then ended in accordance with the accounting policies set out in Note 1 to the financial statements, applied on a basis consistent with that of the preceding year.

O.P. Cormier, F.C.A.
Deputy Auditor General

Halifax, Nova Scotia
August 31, 1984

# BALANCE SHEET
# As at March 31, 1984

## ASSETS

| | 1984 | 1983 |
|---|---|---|
| **General Fund** | | |
| Cash | $ 119,585 | $ 193,879 |
| Short term investments | 230,875 | 215,674 |
| Accounts receivable | 438,514 | 271,688 |
| Employee advances | 2,610 | 3,209 |
| Prepaid expenses | 13,404 | — |
| Due from Province of Nova Scotia Year end settlement account (Note 2) | 1,267 | — |
| | $ 806,255 | $ 684,450 |
| **Special Fund** (Note 3) | | |
| Cash | $ 25,013 | $ 48,985 |
| Short term investments | 62,013 | 10,785 |
| Accrued interest | 1,686 | 2,161 |
| Due from General Fund | 10,474 | 1,000 |
| | $ 99,186 | $ 62,931 |

## LIABILITIES AND FUND BALANCES

| | 1984 | 1983 |
|---|---|---|
| **General Fund** | | |
| Accounts payable and accrued liabilities | $ 687,081 | $ 567,202 |
| Unearned income | 108,700 | 86,200 |
| Due to Special Fund | 10,474 | 1,000 |
| Due to Province of Nova Scotia Year end settlement account (Note 2) | — | 30,048 |
| | $ 806,255 | $ 684,450 |
| **Special Fund** | | |
| Radiation Oncology Trust Fund | $ 8,948 | $ 8,517 |
| Tumor Clinic Research Fund | 2,791 | 2,791 |
| Trial Fund | 7,000 | — |
| Chemotherapy Fund | — | 11,653 |
| Unrestricted Funds | 80,447 | 39,970 |
| | $ 99,186 | $ 62,931 |

# GENERAL FUND
# STATEMENT OF REVENUE AND EXPENSE

**For The Year Ended March 31, 1984**

| | 1984 | 1983 |
|---|---|---|
| **Revenue** | | |
| Nova Scotia Department of Health | | |
| Insured services | $2,426,500 | $1,596,000 |
| Furniture and equipment | 478,927 | 13,250 |
| Hospital services | 562,180 | 571,070 |
| Other services | 57,935 | 29,681 |
| Other | 38,295 | 111 |
| | 3,563,837 | 2,210,112 |
| **Expense** | | |
| Nursing services | 423,801 | 335,979 |
| Technical services | 259,120 | 218,731 |
| Oncology services | 433,604 | 373,797 |
| School services | 20,242 | 15,994 |
| Medical physics | 561,367 | 435,121 |
| Health records | 444,292 | 383,572 |
| Clinic administration | 460,223 | 55,786 |
| Administration | 422,212 | 322,284 |
| Special projects | 29,546 | 25,550 |
| Furniture and equipment | 478,927 | 13,250 |
| Special maintenance | 31,770 | — |
| | 3,565,104 | 2,180,064 |
| **Excess (deficiency) of revenue over expense** | $ (1,267) | $ 30,048 |

# CONTINUITY OF SPECIAL FUND

**For The Year Ended March 31, 1984**

| | | Radiation Oncology Trust Fund | Tumor Clinic Research Fund | Trial Fund | Chemotherapy Fund | Unrestricted Funds | Total |
|---|---|---|---|---|---|---|---|
| **Balance, beginning of year** | | $ 8,517 | $ 2,791 | $ — | $ 11,653 | $ 39,970 | $ 62,931 |
| Add: | Donations | — | — | 7,000 | — | 5,696 | 12,696 |
| | Investment income | 595 | — | — | — | 26,844 | 27,439 |
| | Transfer from restricted funds | — | — | — | — | 11,653 | 11,653 |
| | | 595 | — | 7,000 | — | 44,193 | 51,788 |
| Deduct: | Transfer to unrestricted funds | — | — | — | 11,653 | — | 11,653 |
| | Bad debt expense | — | — | — | — | 3,716 | 3,716 |
| | Other expense | 164 | — | — | — | — | 164 |
| | | 164 | — | — | 11,653 | 3,716 | 15,533 |
| **Balance, end of year** | | $ 8,948 | $ 2,791 | $ 7,000 | $ — | $ 80,447 | $ 99,186 |

# NOTES TO FINANCIAL STATEMENTS

**March 31, 1984**

**1. Accounting Policies**

These financial statements have been prepared in accordance with generally accepted accounting principles modified by the policy of charging furniture and equipment purchases to expense in the year of acquisition. This expense is charged to the General Fund.

**3. Due to/from the Province of Nova Scotia**

The year end settlement account reflects the excess or deficiency of revenues over expenditures for the year in the General Fund. Revenues and expenses of the Special Fund are not shareable with the Province of Nova Scotia.

**3. Special Fund**

The Special Fund was created during 1982-83 and includes restricted trust funds, investment income and donations. The restricted trust funds represent contributions to the Foundation that are designated by the contributors to be used for specific purposes.